

The Chemours Company

Fayetteville, NC

Vinyl Ethers South – Scrubber Upset

10/6/17

Description of Event

The Vinyl Ethers South (VES) Waste Gas Scrubber (WGS) is designed to remove acidic materials from process vent streams using Potassium Hydroxide (KOH). On October 6, 2017, the VES Central Control Room (CCR) technician was having trouble with the WGS operation and was trying to get it back to normal when the field technician noticed a fine mist exiting the VES area vent stack. Liquid material was noticed on the sidewalk to the west of the VES Tower and the material was checked with litmus paper and the pH was ~12. It was determined by First Line Supervisor that an estimated 20 lbs of KOH with trace amounts of Dimer acid fluoride (DAF) or DAF Potassium salt had exited the vent stack.

Commented [1]: What does this mean?

Commented [CCE2R1]:

The vent stack is located next to the non-contact cooling water drainage ditch that flows to the WWTP and then enters the Cape Fear River through outfall 002. As the liquid/foam material from the vent stack settled, it appears that some portion of it entered the drainage ditch and surrounding areas. A heavy rain occurred the next two days after this event and likely washed more material from the surrounding area into the ditch. Any of DAF or DAF potassium salt from the vent stack will convert to C3 Dimer Acid when it contacts a water stream.

Quantity of Material Released

It is estimated that 20 pounds of KOH with trace amounts of DAF or DAF Potassium salt exited the stack. It is further estimated that the amount of DAF or DAF Potassium salt that was released was < 2 lb.

Cause of Event

At the time of the event, the VES area was in the process of decontaminating process equipment to prepare for the site maintenance shutdown and turnaround (TAR). Decontamination involves a series of pressure and vent cycles where vessels are pressured with Nitrogen and then the nitrogen is vented down through the WGS.

While the VES area was working on decontamination, the Vinyl Ethers North (VEN) area was in the process of using nitrogen to blowout the DAF transfer Line to the DAF ISO Container. This container is located in the VES area and also vents to the VES WGS. When technicians started blowing out the DAF transfer line, the WGS experienced high delta pressure and an alarm on the exit knock out pot (KOP) level switch, suggesting liquid/foam carryover from the WGS to the KOP.

The higher than normal flow of nitrogen through the scrubber system entrained some of the liquid/foam from the knock out pot to the VES tower exhaust stack.

Preventative Actions

The following actions have been taken to prevent recurrence:

- Communicating to technicians the importance of limiting the flows to the WGS while completing decontamination.
- Developing a communication package to review with technicians about use of service manifolds, venting to the WGS, and actions to take during a scrubber upset.